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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,364	07/20/2001	James C. Chen	CHEN0175	3039

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EXAMINER

MULLINS, BURTON S

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 11/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/910,364

Applicant(s)

CHEN ET AL.

Examiner

Burton S. Mullins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 21-55 is/are pending in the application.
- 4a) Of the above claim(s) 21-55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Invention I (claims 1-15) in Paper No. 5 is acknowledged. Applicant canceled claims 16-20. However, the examiner notes that applicant failed to cancel claims 21-55, also part of non-elected Invention II (see restriction requirement). Thus, since the claims 21-55 are not readable on the elected invention, claims 21-55 are withdrawn from consideration.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 1 and 15, recitations "an element of the magnetic field generator" and "an element that is moved by the prime mover" are vague and indefinite. It is not clear if this is the previously-recited magnet or some other "element." In the former case, this would be redundant; in the latter, vague and indefinite. In claim 13, recitation "a plurality of different size receiver coils" lacks antecedent basis. Only one receiver coil has been recited in claim 1.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Summers (US 3,672,352) in view of Bolduc (US 3,817,237) and McKean (US 4,340,038).

Summers teaches a contactless energy transfer apparatus comprising: a portable receiving unit implanted within the body (Fig.9) including: a receiver coil 34; and a housing (outer coating 50, e.g., silicon rubber, c.3, line 66-c.4, line 9) in which the receiver coil is disposed, said housing supporting the receiver coil within the body; and a flux generator including a magnetic field generator comprising at least one permanent magnet 32 and a prime mover (indicated by arrow in Fig.9) drivingly coupled to the permanent magnet, causing said magnet 32 to move relative to the receiver coil 34 (Fig.9), wherein movement of said magnet 32 of the magnetic field generator produces a varying magnetic field that is coupled to the receiver coil 34 and induces an electrical current to flow in the receiver coil (c.5, lines 55-66; Figs.9-11).

Summers differs in that: 1) the flux generator does not comprise "a housing adapted to be disposed proximate the housing of the receiving unit;" and 2), the receiver coil does not include a "core."

Regarding (1) Bolduc teaches a regulatory apparatus 16 (Fig.1) implantable in the body of an animal to control the functioning of bioconveying and biotransmitting means. The

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regulatory apparatus is responsive to a remote moving magnetic field located outside the body in a remote actuator 17 which controls the bioconveying means (c.1, lines 23-28). The external remote actuator 17 comprises a flux generator formed by rotating permanent magnet 68, prime mover (motor) 66, drive shaft 67 and housing 69 (c.3, lines 55-65). The motor 66 rotates the magnet 68 and actuator 17 is adapted to be held in close proximity to the regulatory apparatus to provide a magnetic coupling between the actuator 17 and the regulatory apparatus 16 (c.3, line 66-c.4, line 4). The housing 69 encloses the motor 66 (c.3, lines 61-62).

Regarding (2), McKean teaches a magnetic field concentration means for an implanted device comprising a "core" or metallic slug 28 and a magnetic pick-up coil 36 (Fig.5). Magnetic lines of flux generated by an external magnetic field generator 24 are intercepted by the slug, which acts as a "concentrator" to increase magnetic flux line density provided to the pick-up coil (c.4, lines 47-55).

It would have been obvious to one having ordinary skill in the art to modify Summers flux generator and provide a housing per Bolduc since the housing would have been desirable to enclose the prime mover, and further to provide a core for the receiver coil per McKean since the core would concentrate magnetic lines of force and improve the efficiency of power transfer by eliminating bulky implants or high power magnetic field generation capability (c.2, lines 20-30).

Regarding claim 2, the metallic slug comprising the pick-up coil core in McKean is necessarily "formed of magnetically permeable material" since it conducts magnetic flux.

Regarding claims 3-4, the prime mover (motor 66) in Bolduc is disposed within the housing.

Regarding claim 6, as best understood, the "element" could comprise the shaft taught by both Summers and Bolduc.

6. Claims 7-8 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Summers, Bolduc and McKean as applied to claim 1 above, and further in view of common knowledge. Regarding claim 7, though neither Summers, Bolduc or McKean specifically disclose rare earth alloys used for the permanent magnets, the examiner takes official notice that such rare earth magnets (e.g., the common neodymium magnets) would have been obvious to employ to one of ordinary skill in the art. Regarding claims 8 and 13-14, it has been held that duplicating elements of invention, such as duplicating the magnets and receiver coils in Summers and Bolduc, involves ordinary skill.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Summers in view of Bolduc. Summers teaches a contactless energy transfer apparatus adapted to couple magnetic energy into a portable device 50 implanted within the body comprising: a contactless energy transfer apparatus (Fig.9) disposed proximate a magnetic receiving portion (receiver coil 34) of the portable device; a prime mover (inherent, indicated by arrow in Fig.9); and a magnetic field generator comprising a permanent magnet 32 and a shaft (not numbered, Fig.9) driven by the prime mover, thus causing a varying magnetic field to be produced that is adapted to transfer energy into the magnetic energy receiving portion (receiver coil 34) of the portable device (c.5, lines 55-66; Figs.9-11).

Summers differs in that the flux generator does not comprise "a housing."

Bolduc teaches a regulatory apparatus 16 (Fig.1) implantable in the body of an animal to control the functioning of bioconveying and biotransmitting means. The regulatory

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apparatus is responsive to a remote moving magnetic field located outside the body in a remote actuator 17 which controls the bioconveying means (c.1, lines 23-28). The external remote actuator 17 comprises a flux generator formed by rotating permanent magnet 68, prime mover (motor) 66, drive shaft 67 and housing 69 (c.3, lines 55-65). The motor 66 rotates the magnet 68 and actuator 17 is adapted to be held in close proximity to the regulatory apparatus to provide a magnetic coupling between the actuator 17 and the regulatory apparatus 16 (c.3, line 66-c.4, line 4). The housing 69 encloses the motor 66 (c.3, lines 61-62).

It would have been obvious to one having ordinary skill in the art to modify Summers flux generator and provide a housing per Bolduc since the housing would have been desirable to enclose the prime mover.

Allowable Subject Matter

8. Claim 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. The motor in Bolduc is located inside the flux generator housing 69, not outside per claim 5.

9. Claims 9-12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Regarding claim 9, neither Summers nor any combination with the prior art teaches or suggests reciprocal motion of the magnet. Regarding claim 10, the prior art, alone or in combination, does not teach the claimed magnetic flux shunt on the magnetic field generator for varying the field of the permanent

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magnet. The flux shunt or "slug" in McKean is located on the implanted, portable receiving unit. Regarding claim 11, the prior art, alone or in combination, does not teach the claimed "adjustment member...selectively actuatable to change a maximum magnetic flux that is coupled to the core of the receiver coil." In McKean, there is no additional flux adjustment member besides the flux-conducting slug itself.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hutchins teaches a portable magnetic coupling device with a housing for use with an implanted pump.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 305-1341 for regular communications and 305-1341 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.



Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm

November 26, 2002